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EXAMINER

SWICKHAMER, CHRISTOPHER M

ART UNIT

PAPER NUMBER

2697

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9

Please find below and/or attached an Office communication concerning this application or proceeding.

[Handwritten signature]

Office Action Summary

Application No.

09/539,468

Applicant(s)

DANIELSON ET AL.

Examiner

Christopher M Swickhamer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: On page 2, line 2, "it's" should be replaced with -- its --. Appropriate correction is required.
2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-10, 12, 13, 16, 18 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Referring to claim 1, on line 21, the claim states "it's respective control channel."

Using the terminology "it's" makes the claim indefinite since it cannot be concretely ascertained to which the term "it's" refers. The claim will be examined assuming that "it's" refers to the control channel of the respective node.

- Claim 12 has a similar recitation of the term "it's" in line 13 of page 13. The claim will be examined assuming "it's" refers to the subject node.

- Claim 7 recites the limitation "the signaling protocol" in lines 1-2 of the claim. There is insufficient antecedent basis for this limitation in the claim. The claim will be examined by replacing "the" with "a."

- Claims 9 and 20 recite the limitation "essentially fixed size." The term "essentially" renders the claims indefinite as it is unknown whether the size of the frame is fixed or not. The claims will be examined ignoring the word "essentially."

- Claim 16 recites the limitations "the first mentioned types" and "the second mentioned types" in lines 1-2 and 3-4 respectively. There is insufficient antecedent basis for this limitation in the claim. The claim will be examined replacing "the" with "a."

- Claim 18 recites the limitation "the signaling protocol" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. The claim will be examined replacing "the" with "a."

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6-14, and 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Lindgren et al (WO 97/36401, hereinafter Lindgren). Referring to claim 1, Lindgren discloses a method for establishing control signaling between nodes connected to the same communication

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link, said link carrying a bit stream that is divided into frames, each frame in turn being divided into time slots, said time slot be allocatable to form circuit switched channels (Fig. 1 and 2, pg 1, lns. 16-pg. 2, lns. 11, pg. 6, lns. 3-9, pg. 10, lns. 35-pg. 11, lns. 10), said method comprising the steps of: all nodes connected to said virtual network on the link using, at link start-up, the same Basic Signaling Channel (BSC) and predefined static times slots (time slot or set of time slots) in said frames to receive control signaling messages from and transmit control signaling messages to nodes connected to said link (pg. 6, lns. 26-pg. 7, lns. 5, pg. 9, lns. 20-33, pg. 10, lns. 35-pg. 11, lns. 10); said nodes establishing, using control signaling via said BSC and predefined static time slots (time slot or set of time slots), respective dynamic control channels, defined by respective time slots or sets of time slots in said frames, reserved for transmission of control signaling messages from respective ones of said nodes (pg. 8, lns. 4-20, pg. 10, lns. 5-pg. 11, lns. 10); each respective one of said nodes using, when having been reserved such a respective control channel, it's respective control channel for sending control signaling messages to other nodes connected to said link, the other nodes on the link accessing this respective control channel only for receiving control signaling messages (pg. 6, lns. 32-pg. 7, lns. 6, pg. 7, lns. 16-pg. 8, lns. 20).

- Referring to claim 2, Lindgren discloses a method as claimed in claim 1, said step of said nodes establishing respective control channels to be used for transmission of control signaling messages from respective ones of said nodes comprising said nodes first determining, using control signaling via said BSC and predefined static time slots (time slot or set of time slots), which nodes that shall have reserved write access to which time slots of said frame, each respective node then selecting its respective dynamic time slots (time slot or set of time slots), to

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be used as its control channel, from the time slots that it has so been determined to have reserved write access to and informing, using control signaling via said predefined time slot or set of time slots, other nodes of the definition of said respective time slot or set of time slots to be used as the node's control channel for its transmission of control signaling messages (pg. 7, lns. 16-pg. 8, lns. 20).

- Referring to claim 3, Lindgren discloses a method as claimed in claim 1, each node, when receiving a control signaling message in said predefined static time slots (time slot or set of time slots) from an upstream node on a bit stream, determining whether or not the message is addressed exclusively to said node and, if not, transmitting said message to a downstream node on said bit stream in said predefined time slot or set of time slots (pg. 8, lns. 4-20).

- Referring to claim 6, Lindgren discloses a method as claimed in claim 1, the number of time slots determined to define the respective control channel is determined independently for each respective node based upon a control signaling capacity criteria for the respective node (pg. 7, lns. 35-pg. 8, lns. 3).

- Referring to claim 7, Lindgren discloses the method as claimed in claim 1, wherein a signaling protocol that is used on said predefined static time slots (time slot or set of time slots) to establish said control channels and/or payload channels is the same protocol as one that is used on said control channels for establishing payload channels (pg. 8, lns. 3-20). The system of Lindgren uses the same protocol of marking control time slots and sending information indicating time slots over the time channel. This method is used to dynamically allocate control and data slots.

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- Referring to claim 8, Lindgren discloses a method as claimed in claim 1, said link being a unidirectional shared link (pg. 2, lns. 13-20).

- Referring to claim 9, Lindgren discloses a method as claimed in claim 1, said frames and said time slots each being of essentially fixed size (Fig. 2, pg. 6, lns. 3-10).

- Referring to claim 10, Lindgren discloses a method as claimed in Claim 1, said predefined time slot or set of time slots being the first time slot in each frame (Fig. 2).

- Referring to claim 11, Lindgren discloses a method for establishing control signaling between nodes connected to the same communication link, said link carrying a bit stream that is divided into frames, each frame in turn being divided into time slots, said time slot be allocatable to define circuit-switched channels (Fig. 1 and 2, pg. 1, lns. 16-pg. 2, lns. 11, pg. 6, lns. 3-10), said method being performed by a subject node of said nodes and comprising the steps of: using, at link start-up, a Basic Signaling Channel (BSC) and predefined static time slots (time slot or set of time slots) in said frames to receive control signaling messages from and to transmit control signaling messages to other nodes connected to said link (col. 6, lns. 26-pg. 7, lns. 5, pg. 9, lns. 20-33, pg. 10, lns. 35-pg. 11, lns. 10); establishing, using control signaling via said predefined static time slots (time slot or set of time slots), a dynamic control channel defined by another time slot or set of time slots in said frames to be used exclusively by the subject node for transmission of control signaling messages to other nodes connected to said link (pg. 8, lns. 4-20, pg. 10, lns. 35-pg. 11, lns. 10); and, having done so, using said control channel to transmit control signaling messages to other nodes connected to said link (pg. 6, lns. 32-pg. 7, lns. 5, pg. 7, lns. 16-pg. 8, lns. 20).

- Referring to claim 12, Lindgren discloses a method as claimed in claim 11, said allocating step comprising the steps of: determining, using control signaling via BSC and said predefined static time slots (time slot or set of time slots), which time slots of said frame that the subject node shall have reserved write access to (pg. 6, lns. 32-pg. 7, lns. 15); selecting said another time slot or set of time slots, to define said control channel, from the time slots that the subject node has so been determined to have reserved write access to (pg. 7, lns. 16-pg. 8, lns. 11), and informing, using control signaling via said predefined time slot or set of time slots, other nodes of the definition of said another time slot or set of time slots to be used as the subject node's control channel for its transmission of control signaling messages (pg. 8, lns. 11- 31).

- Referring to claim 13, Lindgren discloses a method as claimed in claim 12, further comprising determining, using control signaling via said predefined time slot or set of time slots, yet another time slot or set of time slots in said frames defining a another control channel to be used exclusively by another node for transmission of control signaling messages on said link, the subject node only read accessing said another control channel to receive control signaling messages from said another node (pg. 7, lns. 16-pg. 8, lns. 20). The allocation is performed dynamically, so the process can be used to define more slots for control signaling.

- Referring to claim 14, Lindgren discloses a method as claimed in claim 11, the subject node, when receiving a control signaling message in said predefined time slot or set of time slots from an up stream node on the link, determining whether or not the message is addressed exclusively to the subject node and, if not, transmitting said message to a downstream node on said link in said predefined time slot or set of time slots (Fig. 5, pg. 11, lns. 20-pg. 12, lns. 25).

- Referring to claim 17, Lindgren discloses a method as claimed in claim 11, the number of time slots allocated to define said control channel being determined independently for the subject node based upon a signaling capacity criterion for the subject node (pg. 7, lns. 35-pg. 8, lns. 5).

- Referring to claim 18, Lindgren discloses a method as claimed in claim 11, wherein a (the) signaling protocol that is used on said BSC and predefined static time slots (time slot or set of time slots) to establish said control channels and/or payload channels is the same protocol as one that is used on said control channels for establishing payload channels (pg. 8, lns. 3-20). The system of Lindgren uses the same protocol of marking control time slots and sending information indicating time slots over the time channel. This method is used to dynamically allocate control and data slots.

- Referring to claim 19, Lindgren discloses a method as claimed in claim 11, said link being a unidirectional shared link (pg. 2, lns. 12-20).

- Referring to claim 20, Lindgren discloses a method as claimed in claim 11, said frames and said time slots each being of a (essentially) fixed size (Fig. 2, pg. 6, lns. 2-9).

- Referring to claim 21, Lindgren discloses a method as claimed in claim 11, said predefined static time slots (time slot or set of time slots) being the first time slot in each frame (Fig. 2).

- Referring to claim 22, Lindgren discloses a method for establishing control signaling between nodes connected to the same communication link, said link carrying a bit stream that is divided into frames, each frame in turn being divided into time slots, said time slot he allocatable to define circuit-switched channels (Fig. 2, pg. 1, lns. 16-pg. 2, lns. 11, pg. 6, lns. 3-10), said

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method comprising the steps of: said nodes using, at link start-up, predefined point-to-point channels, all being defined on the virtual network and sharing the same Basic Signaling Channel (BSC) and predefined static time slots (time slot or set of time slots) in said frames, each interconnecting neighbor nodes on said link, and all together forming a basic control signaling channel (packet switched control signaling channel, the channel messages are packets switched between the node controllers) for control signaling (pg. 6, lns. 26-pg. 7, lns. 15, pg. 11, lns. 10-pg. 12, lns. 12); said nodes establishing, using control signaling via said basic control signaling channel (packet switched control signaling channel), respective circuit switched multicasting (point-to-multipoint) control signaling channels defined by respective time slots or set of time slots on said frames to be used for transmission of control signaling messages from respective exclusive ones of said nodes (pg. 11, lns. 10-pg. 12, lns. 12).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4, 5, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lindgren. Referring to claims 4 and 5, Lindgren discloses a method as claimed in claim 1, wherein, when a respective static time slot or set of time slots has been reserved to define a control channel for a respective node (pg. 6, lns. 19-pg. 7, lns. 5, pg. 8, lns. 4-20), but does not

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expressly disclose said respective node using said control channel to transmit certain types of control signaling messages and continuing using said predefined time slot or set of time slots to transmit other types of control signaling messages. Lindgren further does not disclose that the first mentioned types of control signaling messages including messages referring to channel management and the second mentioned types of control messages including messages referring to link state monitoring Lindgren discloses that the control slots are used to carry different messages between the network controllers related to the internal operation of the network (pg. 6, lns. 10-pg. 7, lns. 5). The system of Lindgren could be modified so that the static control slots did the channel management operations of channel establishment and channel release, while the dynamic channels handled the responsibilities of link monitoring, such as allocating bandwidth to the appropriate nodes and links. One of ordinary skill in the art would have been motivated to do this since separating messages on the different control functions into the different slots allows the network controllers to quickly administer all control functions in the DTM system. This avoids a node having to wait for a control slot for certain functions, such as channel management, and it also allows the nodes to create individual control slots for sending control message regarding bandwidth allocation for the links from the node.

- Referring to claim 15, Lindgren discloses a method as claimed in claim 11, the subject node, when having established said control channel, but does not expressly disclose using said control channel to transmit certain types of control signaling messages and continuing using said predefined time slot or set of time slots to transmit other types of control signaling messages. Lindgren discloses that the control slots are used to carry different messages between the network controllers related to the internal operation of the network (pg. 6, lns. 10-pg. 7, lns. 5).

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The system of Lindgren could be modified so that the static control slots did the channel management operations of channel establishment and channel release, while the dynamic channels handled the responsibilities of link monitoring, such as allocating bandwidth to the appropriate nodes and links. One of ordinary skill in the art would have been motivated to do this since separating messages on the different control functions into the different slots allows the network controllers to quickly administer all control functions in the DTM system. This avoids a node having to wait for a control slot for certain functions, such as channel management, and it also allows the nodes to create individual control slots for sending control message regarding bandwidth allocation for the links from the node.

- Referring to claim 16, Lindgren discloses a method as claimed in claim 11, but does not expressly disclose a first (mentioned) type of control signaling messages including messages referring to channel management and a (the) second (mentioned) type of control messages including messages referring to link state monitoring. Lindgren discloses that the control slots are used to carry different messages between the network controllers related to the internal operation of the network (pg. 6, lns. 10-pg. 7, lns. 5). The system of Lindgren could be modified so that the static control slots did the channel management operations of channel establishment and channel release, while the dynamic channels handled the responsibilities of link monitoring, such as allocating bandwidth to the appropriate nodes and links. One of ordinary skill in the art would have been motivated to do this since separating messages on the different control functions into the different slots allows the network controllers to quickly administer all control functions in the DTM system. This avoids a node having to wait for a control slot for certain

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functions, such as channel management, and it also allows the nodes to create individual control slots for sending control message regarding bandwidth allocation for the links from the node.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Bohm et al, *The DTM Gigabit Network*, June 1993.
- Lindgren et al, USP 2002/0126688 A1. *Bitstream Management*.
- Lindgren et al, USP 6,504,853. *Reallocation Procedure*.
- Ramfelt et al, USP 5,982,747. *Method for Managing Failures on Dynamic Synchronous Transfer Mode Dual Ring Topologies*.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M Swickhamer whose telephone number is (703) 306.4820. The examiner can normally be reached on 8:00-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (703) 305.4798. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305.3900.

CMS
August 28, 2003


RICKY NGO
PRIMARY EXAMINER